

# AP Statistics- Section 3.1

## VOCAB

### Exploratory Data Analysis-

- Making conclusions about a population
- From numerical and visual statistics and data

### Formal Statistical Inference-

- making conclusions about a population
- from data
- with a known degree of confidence

90% sure  
that our  
conclusion is  
right

## Design-

Arrangements or patterns for producing data

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What questions do designs need to answer?

Individuals-      How selected?  
                         How many?  
                         How do we form groups with these individuals?

Conclusions - How compare/analyze results/data

## Anecdotal Evidence-

Haphazardly selected individual cases used to make a conclusion about the population. Come to our attention because they stand out in some way.

**\*\* DON'T USE TO REPRESENT POPULATION**

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*Example:*

Plane crash => planes are not safe form of transportation

Eat at Olive garden and get food poisoning => Olive Garden is an unsanitary restaurant

## Available Data-

Data produced in the past for some other purpose but that may help us answer a present question

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*Example:*

Data on internet (DASL)

Library

Data & Statistics Library

## **Population-**

All individuals in a certain group

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*Example:*

All people in Bucks County

All people in CB South

All US Citizens

## **Sample-**

A selection of the individuals from a population (can be good or bad selection)

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*Example:*

Every 5th person that walks into school through the back entrance

Randomly selected homeowners in the county

## Census-

Attempting to gather data from all individuals in a population

\* difficult

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*Example:*

US Census 2000

2010

Undercoverage  
\* homeless

## **Experiment-** *researcher*

Imposes a treatment on the subjects in the experiment and measures the results (observe the responses to the trt)

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*Example:*

Medical expt where we test the effects of a certain drug

## **Observational Study-**

Just observes the subjects, but imposes no treatment, or doesn't interfere

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*Example:*

Observing students' interaction through a 2-way mirror

*Survey*

### Questions to answer:

- 1- What is the design of the experiment?
- 2- Observational Study or Experiment?
- 3- What are the individuals?
- 4- How many individuals? How were they selected?
- 5- What is the population? The sample?
- 6- What are the variables that are being measured?
- 7- What are the questions that the expt/study asks?
- 8- What conclusions were made?
- 9- Any confounding variables?
- 10- Any improvements?